



***GLOBAL
POSITIONING
SYSTEM (GPS)
CONSTELLATION
STATUS
March 1999***

**Captain Zannis Pappas
HQ Air Force Space
Command**



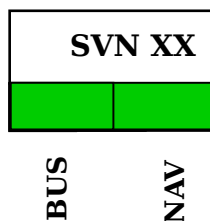
Overview

- GPS Constellation Health/Status
- Proposed National Launch Forecast (NLF)
- Current Transition Plan
- Summary



Constellation Health/Status

	A		B	C	D	E
1	SVN 39 PRN 09	SVN 22 PRN 22	SVN36 PRN06	SVN 24 PRN 24	SVN 14 PRN 14	SVN 32 PRN 01
2	SVN 25 PRN 25	SVN 30 PRN 30	SVN 33 PRN 03	SVN 46 PRN 11	SVN 21 PRN 21	SVN 26 PRN 26
3	SVN 27 PRN 27	SVN 13 PRN 02	SVN 31 PRN 31	SVN 17 PRN 17	SVN 40 PRN 10	SVN 18 PRN 18
4	SVN 19 PRN 19	SVN 35 PRN 05	SVN 37 PRN 07	SVN 34 PRN 04	SVN 23 PRN 23	SVN 29 PRN 29
5	SVN 38 PRN 08	SVN 51 PRN 20		SVN 15 PRN 15	SVN 16 PRN 16	SVN 43 PRN 13



MMD: II=8.6 yrs
IIA=10.6yrs
IIR=7.84yrs
IIF=12.7yrs

28 Operational Satellites
8- Block IIs
18 -Block IIAs
2- Block IIRs



Navigation Signal Availability

SPACE CO.

	A		B		C		D		E
1	SVN 39 PRN 09	SVN 22 PRN 22	SVN36 PRN06	SVN 24 PRN 24	SVN 14 PRN 14	SVN 32 PRN 01			
2	SVN 25 PRN 25	SVN 30 PRN 30	SVN 33 PRN 03	SVN 46 PRN 11	SVN 21 PRN 21	SVN 26 PRN 26			
3	SVN 27 PRN 27	SVN 13 PRN 02	SVN 31 PRN 31	SVN 17 PRN 17	SVN 40 PRN 10	SVN 18 PRN 18			
4	SVN 19 PRN 19	SVN 35 PRN 05	SVN 37 PRN 07	SVN 34 PRN 04	SVN 23 PRN 23	SVN 29 PRN 29			
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Proposed National Launch Forecast

- **NLF recently updated to reflect current Modernization Alternative**

- **Proposed Launches**

FY 00: 2 IIR (21 Apr, 15 Jun)

FY 01: 2 IIR (15 Feb, Jun)

FY 02: 2 IIR (Oct, Jan)

FY 03: 4 IIR Modified*

FY 04: 4 IIR Modified

FY 05: 2 IIR Modified, 1 IIF **

FY 06: 2 IIR Modified, 1 IIF

- **NLF awaiting HQ AFSPC/DO approval**

* IIR Modified: Current capabilities + 2nd civil frequency (L2) + M-Code

** IIF: IIR Modified capabilities + 3rd civil frequency (L5)



Current Transition Plan

- Upgrade Dedicated Monitor Stations and Ground Antennas with New Digital Receivers and Computers
- Replace Existing Master Control Station Mainframe Computer With a Distributed Architecture
- Add Accuracy Improvement Initiative, Air Force Satellite Control Network, and Full IIR Capabilities
- Build Fully Mission Capable Alternate Master Control Station (AMCS) at Vandenberg Tracking Station
- Add IIF Command and Control Functionality

2-Step Plan: Replace Existing Mainframe With Distributed Architecture Then Add Block IIF Functionality



Summary

- **GPS is an aging Constellation**
- **GPS Constellation produces a Healthy Navigation Signal**
 - 28 Operational Satellites
- **Scheduled upgrades will improve performance and meet future requirements**
- **AFSPC is committed to:**
 - Sustain Current Capabilities
 - Modernize GPS